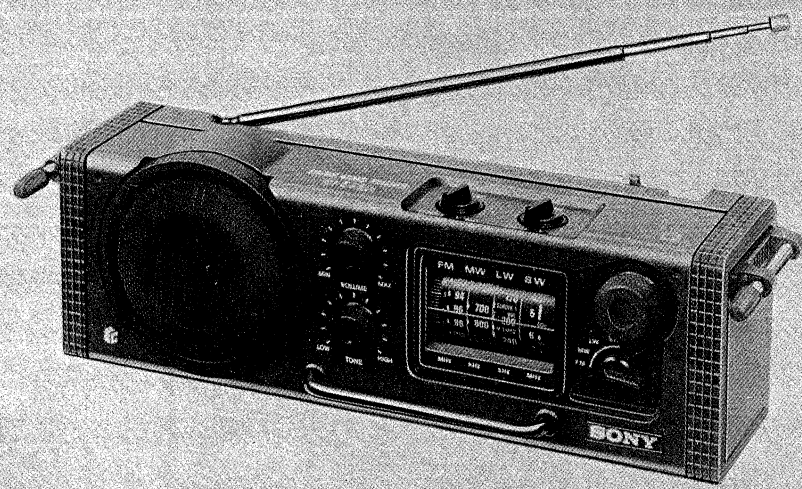
ICF-6000L

AEP Model



FM/AM 4 BAND RECEIVER

SPECIFICATIONS

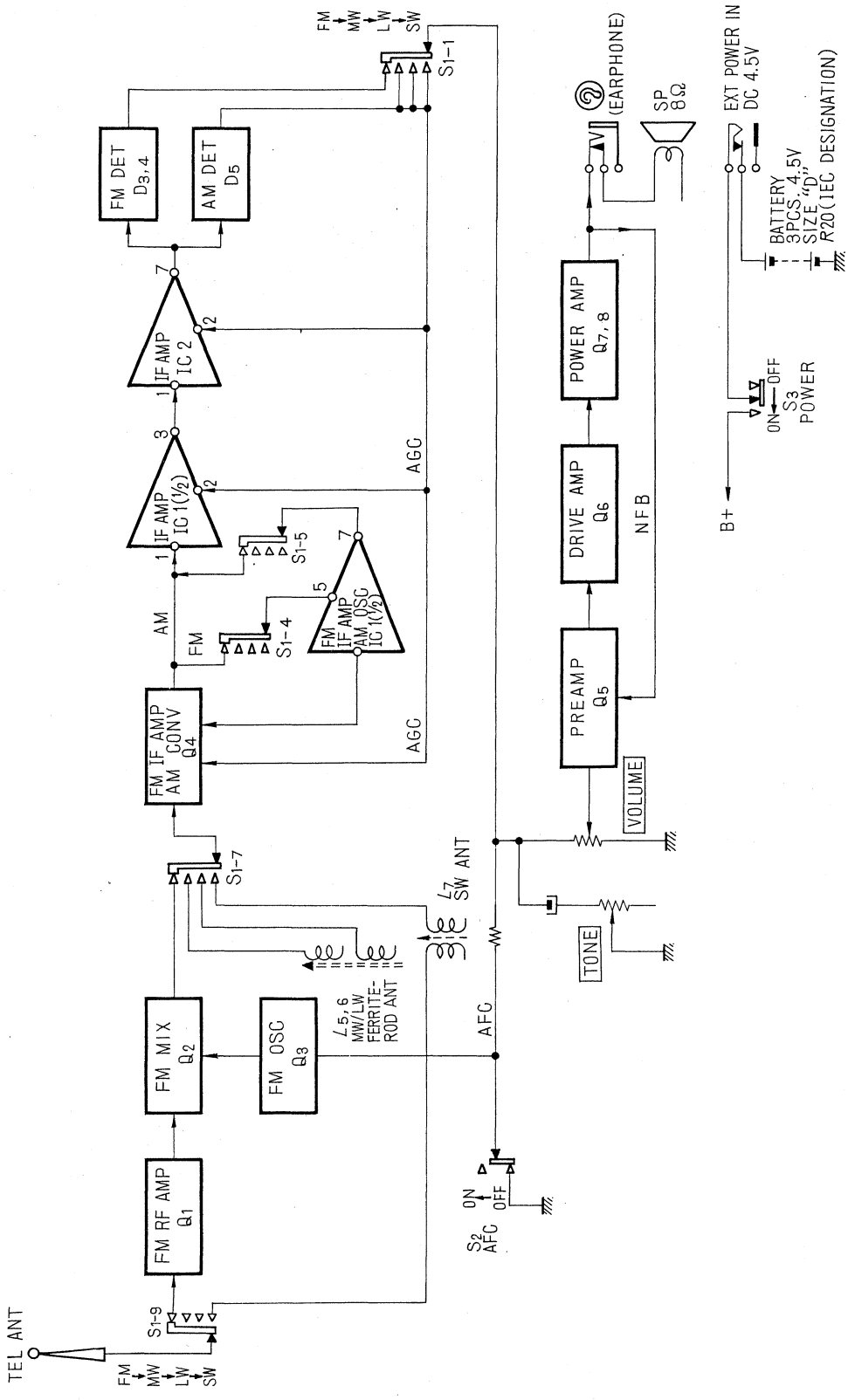
Power Requirements:	4.5 V dc Battery size-D, 3 pcs (IEC designation R20) Car battery cord DCC-127H for 12 V car battery AC power pack AC-456C for AC power supply (110 or 220 V ac, 50/60 Hz)
Power Output:	1900 mW, dc (Total Harmonic Distortion 10 %)
Speaker:	9.2 cm (3 5/8 inches) dia.
Dimensions:	Approx. 352 (w) x 110 (h) x 103 (d) mm 13 7/8 (w) x 4 3/8 (h) x 4 1/8 (d) inches (including projecting parts and controls)
Weight:	Approx. 1.8 kg, 3 lb 15 oz with batteries
Antennas:	FM/SW telescopic antenna MW/LW ferrite-rod antenna
Frequency Ranges:	FM: 87.5–108 MHz (3.43–2.78 m) MW: 530–1,605 kHz (566–187 m) LW: 150–400 kHz (2,000–750 m) SW: 3.9–12 MHz (77–25 m)
Intermediate Frequencies:	FM: 10.7 MHz MW/LW/SW: 468 kHz

SONY®

SERVICE MANUAL

SECTION 1
OUTLINE

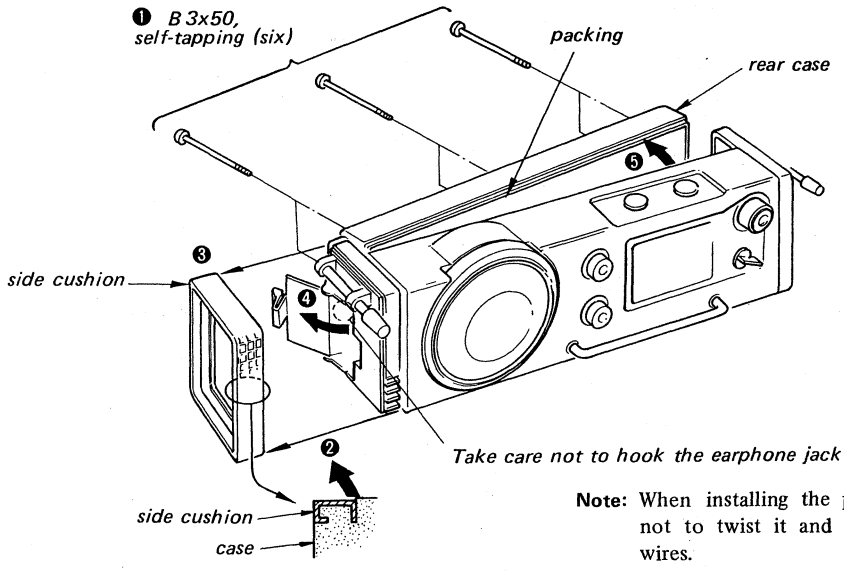
BLOCK DIAGRAM



SECTION 2
DISASSEMBLY

2-1. REMOVALS

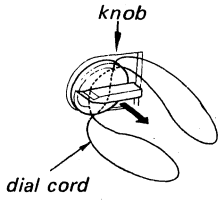
Rear Case



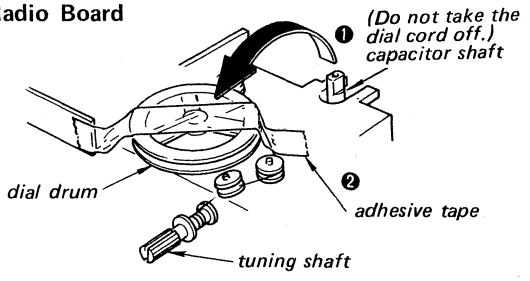
Note: When installing the packing, take care not to twist it and not to catch lead-wires.

Front Case

Pull six knobs off.



Radio Board

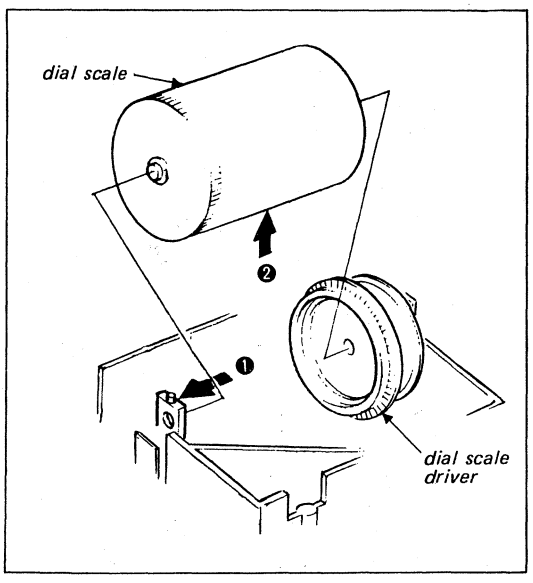


❸ Release the radio board from three claws.

2-2. DIAL CORD STRINGING

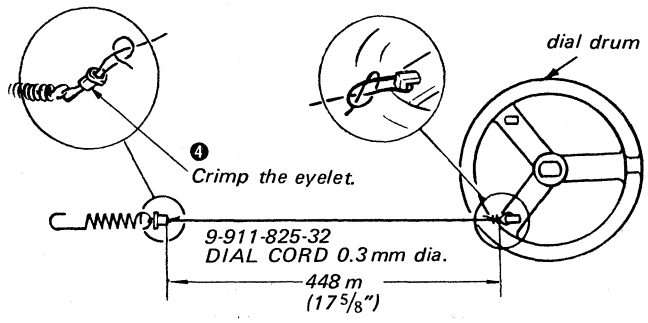
Repair: Audio Amp, Switch and Control Board

2-2. DIAL CORD STRINGING (String the dial cord according to the circled number on pages 3 and 4.)



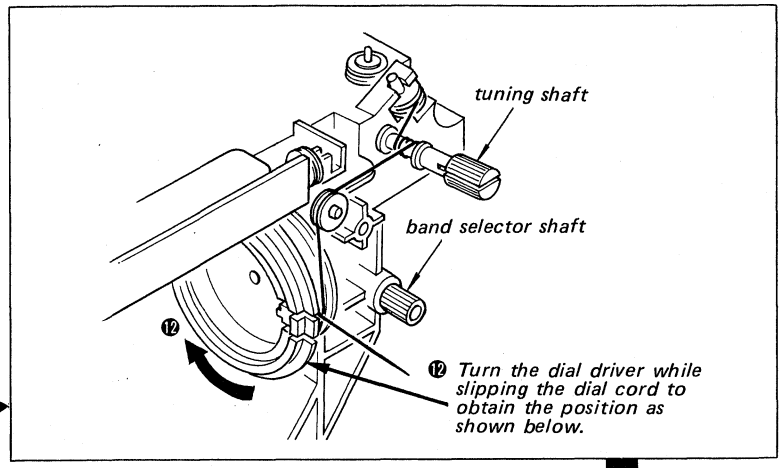
❸

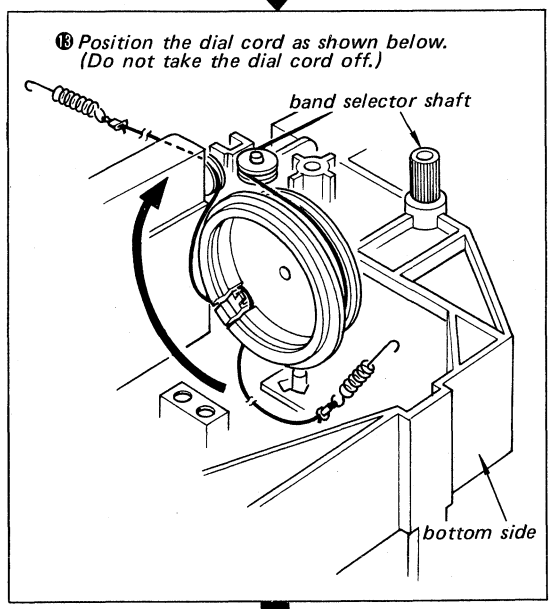
Secure the ties with a locking compound.

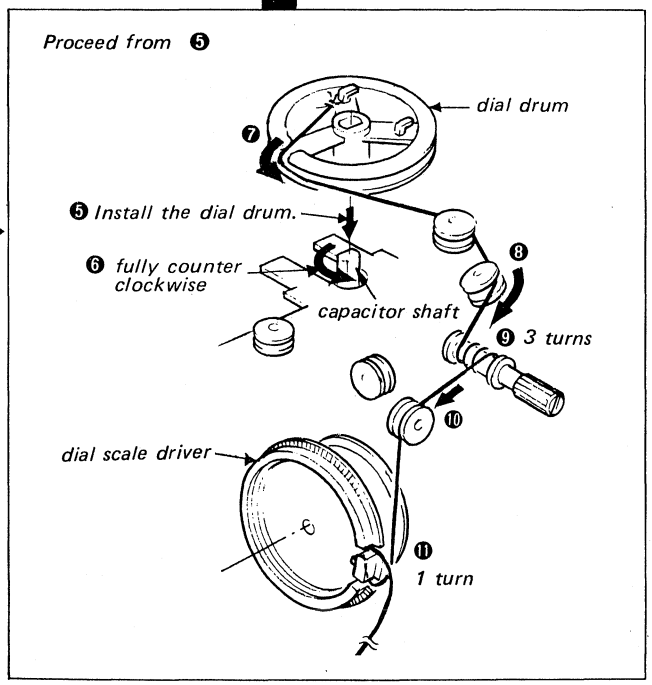


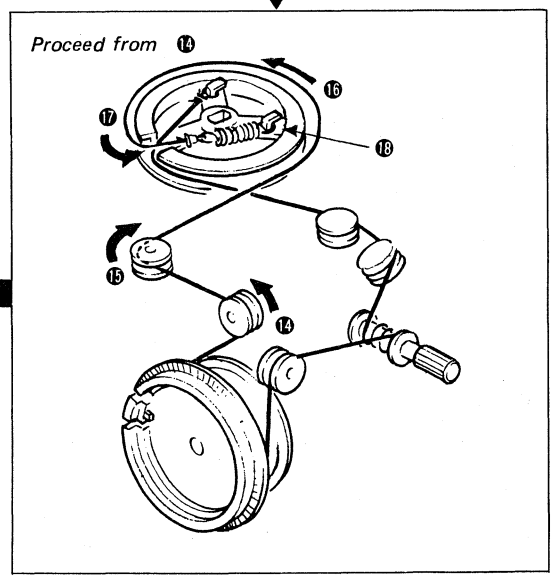
Continued on next page

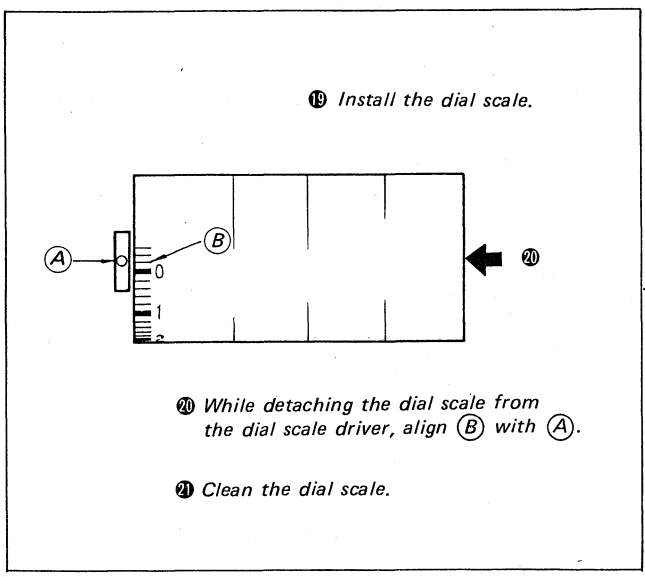
– Continued from page 3 –


tuning shaft
band selector shaft
⓬ Turn the dial driver while slipping the dial cord to obtain the position as shown below.



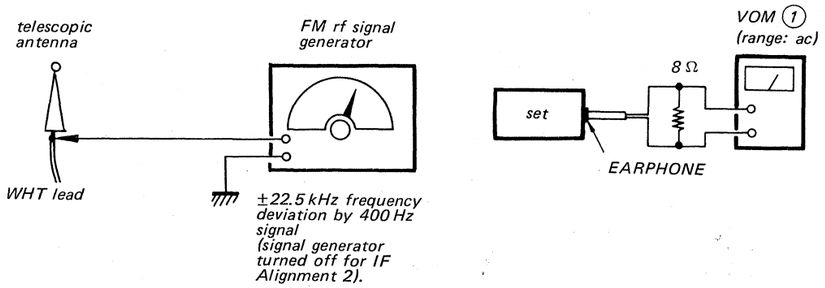






SECTION 3
ADJUSTMENTS

FM


telescopic antenna
FM rf signal generator
VOM (1) (range: ac)
8 Ω
set
EARPHONE
WHT lead
±22.5 kHz frequency deviation by 400 Hz signal (signal generator turned off for IF Alignment 2).

FM IF Alignment 1 (10.7 MHz)		
Adjust for maximum reading on VOM (1) with modulation.		
IFT F1	IFT F2	IFT F3

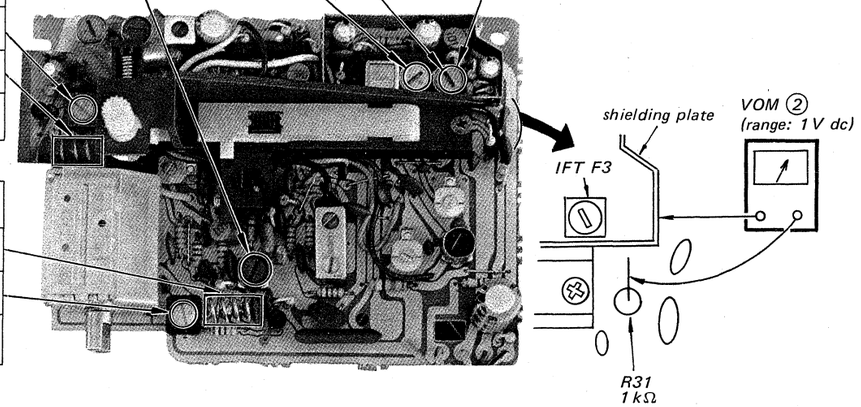
FM IF Alignment 2
Adjust for 0 V dc reading on VOM (2) without signal.
IFT F3

FM Frequency Coverage Adjustment	
108.5 MHz (108 MHz)	CT2
87.1 MHz (87.5 MHz)	L2
Adjust for maximum reading on VOM (1).	

( ): in West Germany

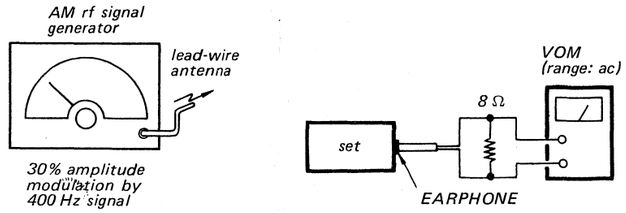
FM Tracking Adjustment	
87.1 MHz (87.5 MHz)	L1
108.5 MHz (108 MHz)	CT1
Adjust for maximum reading on VOM (1).	

( ): in West Germany



MW and AM IF ALIGNMENT

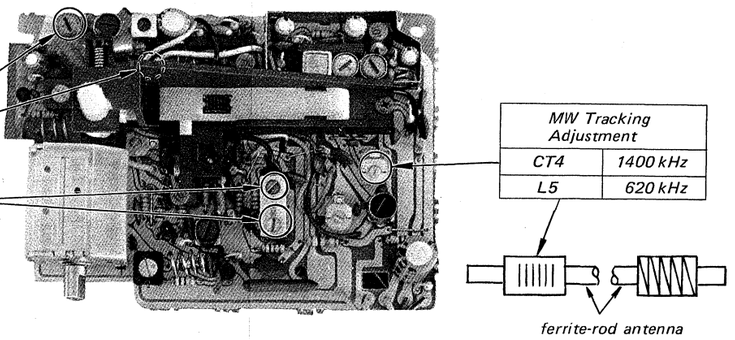
Adjust for maximum reading on VOM.



MW Frequency Coverage Adjustment	
520 kHz	L8
1680 kHz	CT3

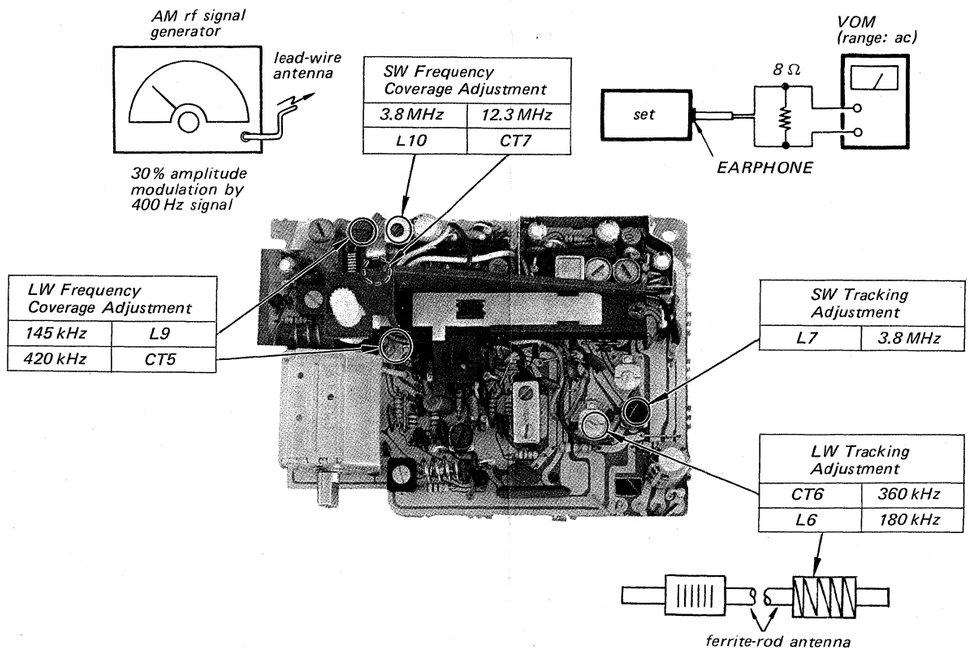
AM IF Alignment	
468 kHz	CFT

MW Tracking Adjustment	
CT4	1400 kHz
L5	620 kHz



SW and LW

Adjust for maximum reading on VOM.



SECTION 4
DIAGRAMS

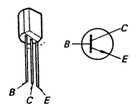
4-1. MOUNTING DIAGRAM

— Conductor Side —

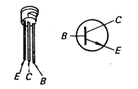
Q	7,8	6	5
D	VDR1		

Q IC	IC2	IC1 1,4	2	3
D	4	3 5	2	1

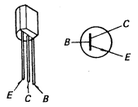
Q1, 2, 4:
D1: 2SC1908



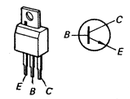
Q3: 2SC668



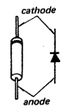
Q5, 6: 2SC1363



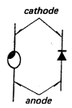
Q7, 8: 2SC1429

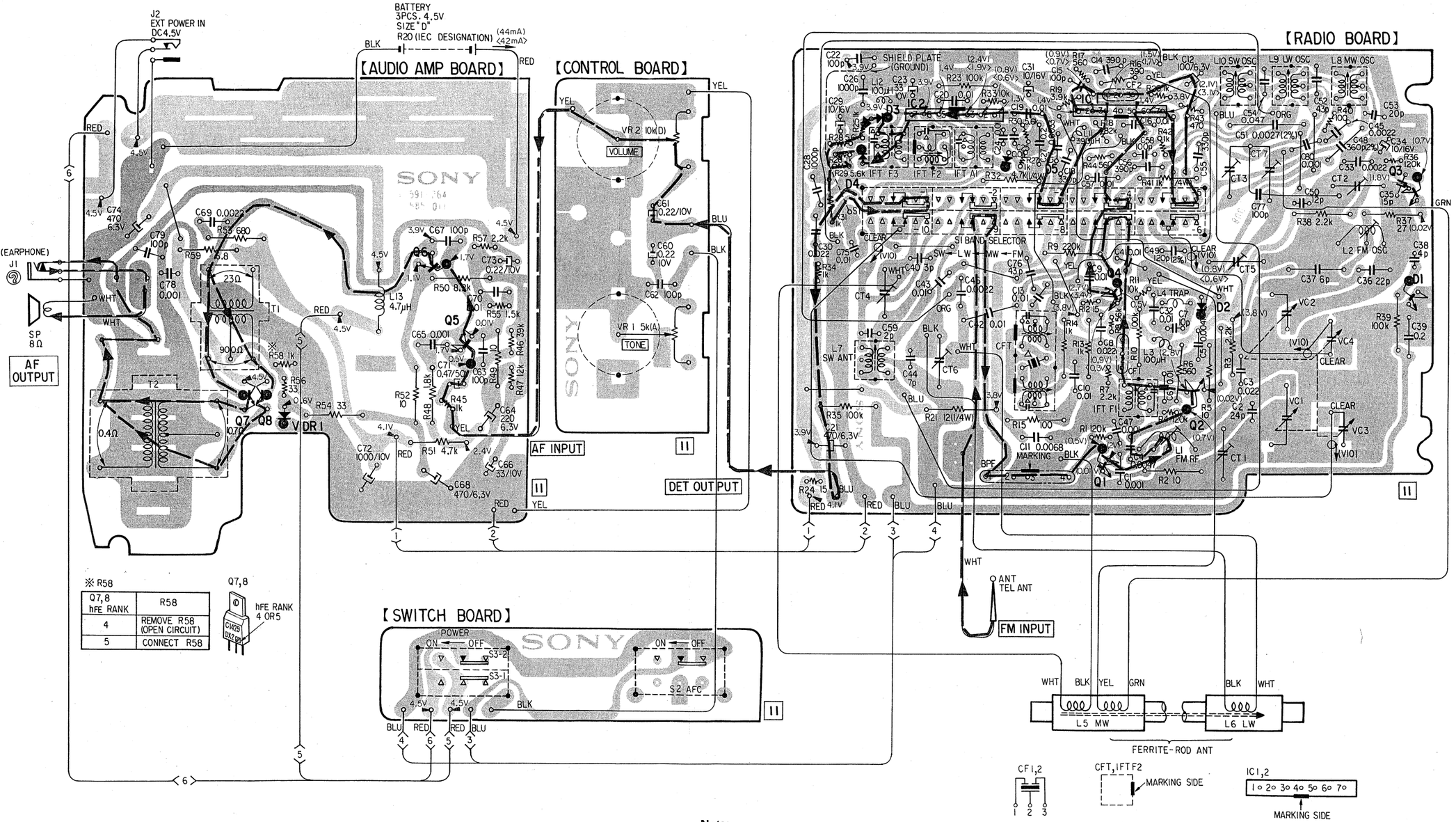


D2, 5: 1S1555
D3, 4: 1T22



VDR1: MV5L



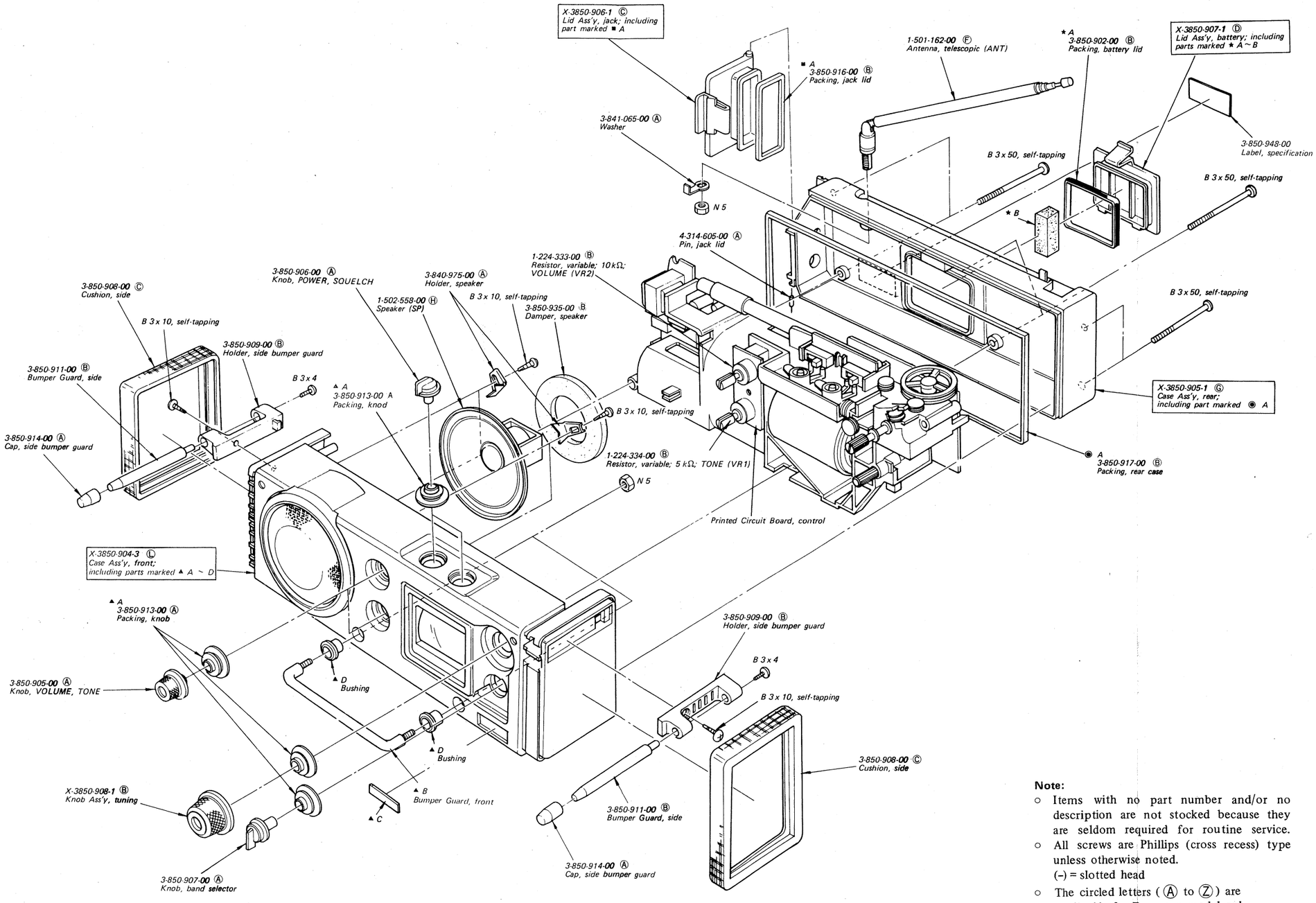


Note:

- Color in ( ) indicates color of sleeving over the end portion of shielded wire.
- B + pattern
- signal path
- DC resistance of transformer is measured on the mounted board. The average value is indicated.

SECTION 5
EXPLODED VIEW

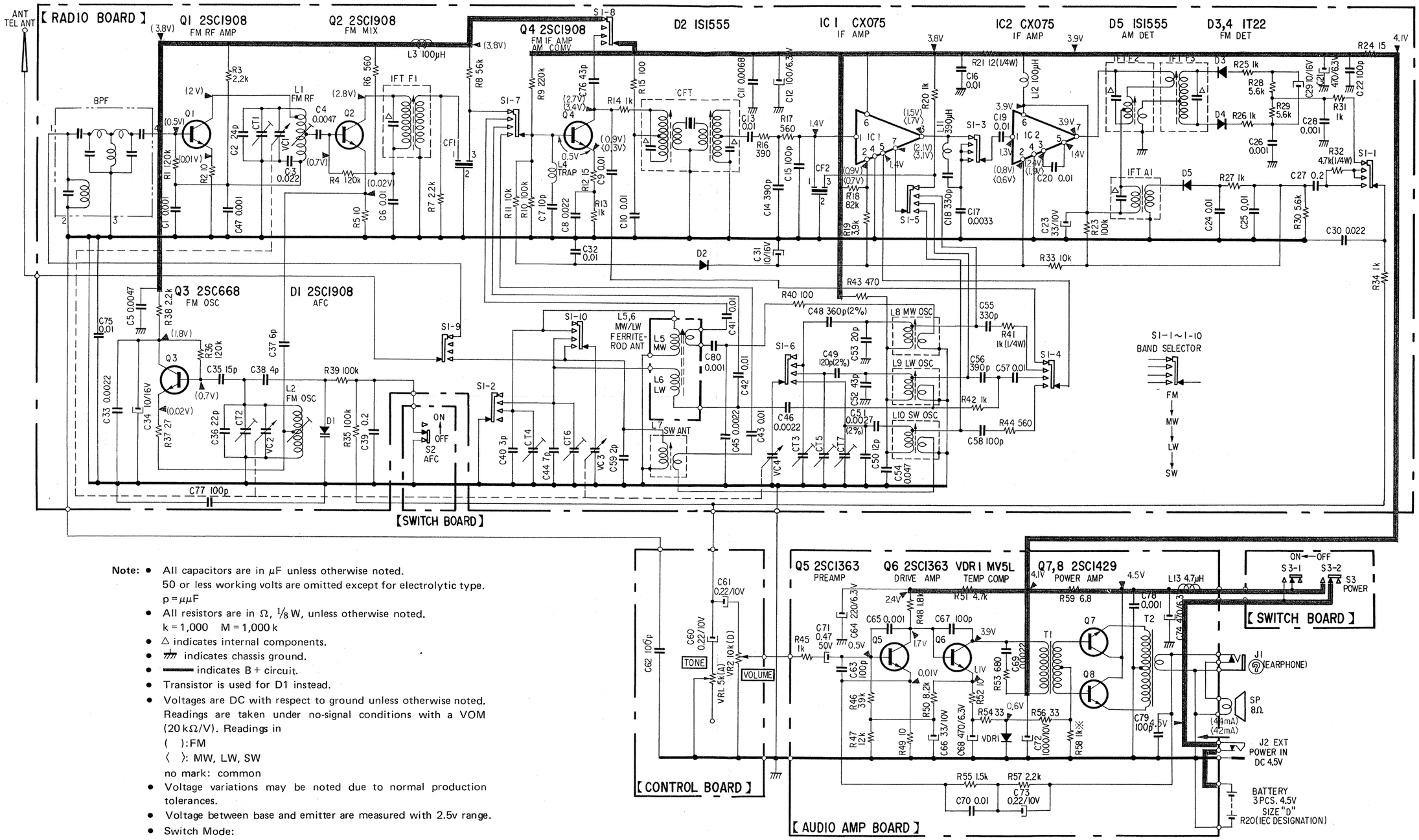
5-1.



Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- The circled letters (Ⓐ to Ⓩ) are applicable for European model only.

4-2. SCHEMATIC DIAGRAM

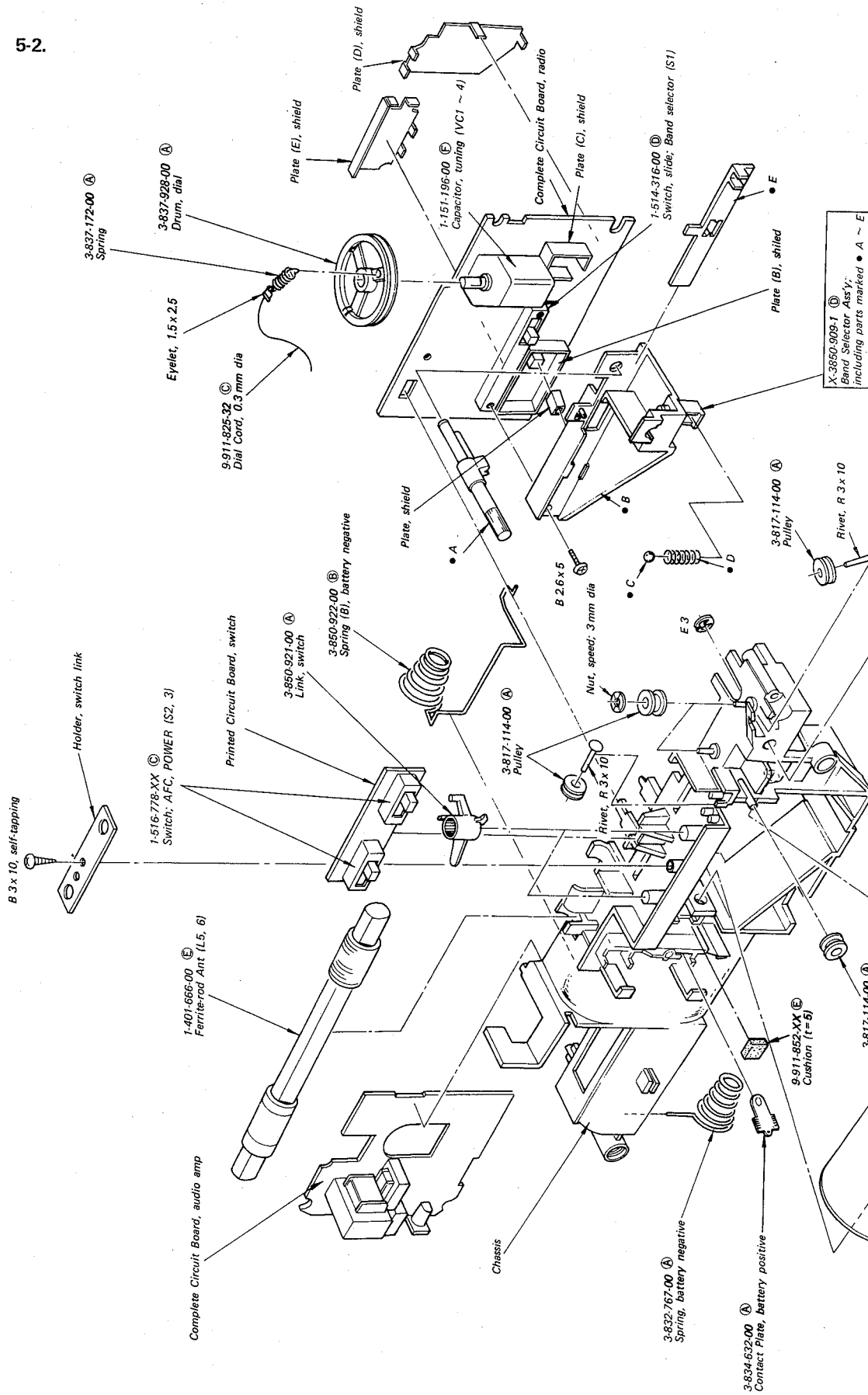


Note:

- All capacitors are in μF unless otherwise noted.
  50 or less working volts are omitted except for electrolytic type.
  p = μμF
- All resistors are in Ω, 1/8 W, unless otherwise noted.
  k = 1,000 M = 1,000 k
- △ indicates internal components.
- ⏚ indicates chassis ground.
- ═══ indicates B + circuit.
- Transistor is used for D1 instead.
- Voltages are DC with respect to ground unless otherwise noted.
  Readings are taken under no-signal conditions with a VOM (20 kΩ/V). Readings in
  ( ): FM
  〈 〉: MW, LW, SW
  no mark: common
- Voltage variations may be noted due to normal production tolerances.
- Voltage between base and emitter are measured with 2.5v range.
- Switch Mode:

Ref. No	Switch	Position
S1	BAND SELECTOR	FM
S2	AFC	OFF
S3	POWER	OFF

5-2.


3-837-172-00 Ⓐ Spring
3-837-928-00 Ⓐ Drum, dial
Eyelet, 1.5 x 2.5
9-911-825-32 Ⓒ Dial Cord, 0.3 mm dia
Plate (E), shield
Plate (D), shield
1-151-196-00 Ⓔ Capacitor, tuning (VC1 ~ 4)
Complete Circuit Board, radio
Plate (C), shield
1-514-316-00 Ⓓ Switch, slide; Band selector (S1)
Plate (B), shiled
X-3850-909-1 Ⓓ Band Selector Ass'y; including parts marked • A ~ E
Plate, shield
B 2.6 x 5
3-817-114-00 Ⓐ Pulley
Rivet, R 3 x 10
3-850-922-00 Ⓑ Spring (B), battery negative
3-850-921-00 Ⓐ Link, switch
Printed Circuit Board, switch
Holder, switch link
B 3 x 10, self-tapping
1-516-778-XX Ⓒ Switch; AFC, POWER (S2, 3)
Nut, speed; 3 mm dia
3-850-923-00 Ⓑ Shaft, tuning
9-911-825-32 Ⓒ Dial Cord, 0.3 mm dia
1-401-666-00 Ⓔ Ferrite-rod Ant (L5, 6)
9-911-852-XX Ⓔ Cushion (t = 5)
Complete Circuit Board, audio amp
Chassis
3-832-767-00 Ⓐ Spring, battery negative
3-834-632-00 Ⓐ Contact Plate, battery positive
3-850-920-00 Ⓑ Driver, dial scale
3-850-918-21 Ⓒ Scale, dial

Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (-) = slotted head
- The circled letters (Ⓐ to Ⓩ) are applicable for European model only.

SECTION 6
ELECTRICAL PARTS LIST

○ The circled letters (Ⓐ to Ⓩ) are applicable for European model only.

Ref. No.	Part No.	Description
		SEMICONDUCTORS
		Transistors
Q1		Ⓑ 2SC1908
Q2		Ⓑ 2SC1908
Q3		Ⓑ 2SC668
Q4		Ⓑ 2SC1908
Q5,6		Ⓑ 2SC1363
Q7,8		Ⓒ 2SC1429
		IC
IC1,2		Ⓓ CX-075A
		Diodes
D1		Ⓑ 2SC1908
D2		Ⓑ 1S1555
D3,4		Ⓑ 1T26
D5		Ⓑ 1S1555
VDR1		Ⓑ MV5L
		COILS
L1	1-425-791-00	Ⓐ FM RF
L2	1-425-792-00	Ⓐ FM Osc
L3	1-407-169-XX	Ⓐ Microinductor, 100μH
L4	1-401-495-00	Ⓑ Trap
L5,6	1-401-666-00	Ⓔ MW/LW Ferrite-rod Antenna
L7	1-401-496-00	Ⓑ SW Antenna
L8	1-405-520-00	Ⓑ MW Osc
L9	1-405-735-00	Ⓑ LW Osc
L10	1-405-672-00	Ⓑ SW Osc
L11	1-407-176-XX	Ⓐ Microinductor, 390μH
L12	1-407-169-XX	Ⓐ Microinductor, 100μH
L13	1-407-591-00	Ⓑ Microinductor, 4.7μH
		TRANSFORMERS
CFT	1-403-827-00	Ⓒ AM IF
IFT A1	1-403-960-00	Ⓑ AM IF
IFT F1	1-403-872-00	Ⓑ FM IF
IFT F2	1-403-953-00	Ⓑ FM Discriminator
IFT F3	1-403-959-00	Ⓑ FM Discriminator
T1	1-423-204-XX	Ⓒ Drive
T2	1-427-306-XX	Ⓒ Output
		FILTERS
BPF	1-231-286-00	Ⓑ Band Pass
CF1,2	1-527-184-XX	Ⓑ Ceramic, 10.7 MHz
		CAPACITORS

All capacitors are in μF and of ceramic unless otherwise noted. (p = μμF)
50 and/or less working voltages are omitted except for electrolytic type.
(elect = electrolytic)

C1	1-102-074-11	Ⓐ 0.001		
C2	1-102-960-11	Ⓐ 24p		
C3	1-101-005-11	Ⓐ 0.022		
C4,5	1-101-003-11	Ⓐ 0.0047		
C6	1-101-004-11	Ⓐ 0.01		
C7	1-102-947-11	Ⓐ 10p		
C8	1-101-005-11	Ⓐ 0.022		
C9,10	1-101-004-11	Ⓐ 0.01		
C11	1-102-103-11	Ⓐ 0.0068		
C12	1-121-413-11	Ⓐ 100	6.3V	elect
C13	1-101-004-11	Ⓐ 0.01		
C14	1-102-113-11	Ⓐ 390p		
C15	1-102-975-11	Ⓐ 100p		
C16	1-101-004-11	Ⓐ 0.01		
C17	1-102-123-11	Ⓐ 0.0033		
C18	1-102-112-11	Ⓐ 330p		
C19,20	1-101-004-11	Ⓐ 0.01		
C21	1-121-424-11	Ⓑ 470	6.3V	elect
C22	1-102-975-11	Ⓐ 100p		
C23	1-121-402-11	Ⓐ 33	10V	elect

○ The circled letters (Ⓐ to Ⓩ) are applicable for European model only.

Ref. No.	Part No.		Description	
C24,25	1-161-032-11	Ⓐ 0.01		boundary layer
C26	1-101-074-11	Ⓐ 0.001		
C27	1-101-798-11	Ⓐ 0.2		
C28	1-102-074-11	Ⓐ 0.001		
C29	1-121-651-11	Ⓐ 10	16V	elect
C30	1-161-034-11	Ⓐ 0.022		boundary layer
C31	1-121-651-11	Ⓐ 10	16V	elect
C32	1-101-001-11	Ⓐ 0.01		
C33	1-102-110-11	Ⓐ 0.0022		
C34	1-121-651-11	Ⓐ 10	16V	elect
C35	1-102-951-11	Ⓐ 15p		
C36	1-102-805-11	Ⓐ 22p		
C37	1-102-943-11	Ⓐ 6p		
C38	1-102-941-11	Ⓐ 4p		
C39	1-101-798-11	Ⓐ 0.2		boundary layer
C40	1-102-940-11	Ⓐ 3p		
C41~43	1-101-004-11	Ⓐ 0.01		
C44	1-102-944-11	Ⓐ 7p		
C45,46	1-102-121-11	Ⓐ 0.0022		
C47	1-102-074-11	Ⓐ 0.001		
C48	1-107-231-11	Ⓐ 360p		silvered mica
C49	1-107-087-11	Ⓐ 120p	2%	silvered mica
C50	1-102-288-11	Ⓐ 12p		
C51	1-103-735-11	Ⓐ 0.0027	2%	styrol
C52	1-102-727-11	Ⓐ 43p		
C53	1-102-958-11	Ⓐ 20p		
C54	1-161-036-11	Ⓐ 0.047	25V	boundary layer
C55	1-102-832-11	Ⓐ 330p		
C56	1-102-834-11	Ⓐ 390p		
C57	1-101-004-11	Ⓐ 0.01		
C58	1-102-975-11	Ⓐ 100p		
C59	1-102-939-11	Ⓐ 2p		
C60,61	1-127-020-11	Ⓑ 0.22	10V	solid aluminum
C62,63	1-102-975-11	Ⓐ 100p		
C64	1-121-419-11	Ⓑ 220	6.3V	elect
C65	1-102-074-11	Ⓐ 0.001		
C66	1-121-402-11	Ⓐ 33	10V	elect
C67	1-102-975-11	Ⓐ 100p		
C68	1-121-424-11	Ⓑ 470	6.3V	elect
C69	1-102-100-11	Ⓐ 0.0022		
C70	1-101-118-11	Ⓐ 0.01		

Ref. No.	Part No.		Description	
C71	1-121-726-11	Ⓐ 0.47	50V	elect
C72	1-121-736-11	Ⓑ 1000	10V	elect
C73	1-127-020-11	Ⓑ 0.22	10V	solid aluminum
C74	1-121-424-11	Ⓑ 470	6.3V	elect
C75	1-161-032-11	Ⓐ 0.01	25V	boundary layer
C76	1-102-966-11	Ⓐ 43p		
C77	1-102-975-11	Ⓐ 100p		
C78	1-102-074-11	Ⓐ 0.001		
C79	1-102-975-11	Ⓐ 100p		
C80	1-102-074-11	Ⓐ 0.001		
CT1,2	1-141-138-XX	Ⓑ Trimer		
CT3,7	1-141-146-XX	Ⓑ Trimer		
CT4~6	1-141-138-XX	Ⓑ Trimer		
VC1~4	1-151-196-00	Ⓕ Tuning		

RESISTORS

All resistors are in Ω, 1/8W and of carbon unless otherwise noted. Regular-type 1/4W carbon resistors are omitted. Check the schematic diagram for the resistance values.
(k = 1000)

R1	1-246-523-11	Ⓐ 120k
R2	1-246-425-11	Ⓐ 10
R3	1-246-481-11	Ⓐ 2.2k
R4	1-246-523-11	Ⓐ 120k
R5	1-246-425-11	Ⓐ 10
R6	1-246-467-11	Ⓐ 560
R7	1-246-481-11	Ⓐ 2.2k
R8	1-246-515-11	Ⓐ 56k
R9	1-246-529-11	Ⓐ 220k
R10	1-246-521-11	Ⓐ 100k
R11	1-246-497-11	Ⓐ 10k
R12	1-246-429-11	Ⓐ 15
R13,14	1-246-473-11	Ⓐ 1k
R15	1-246-449-11	Ⓐ 100
R16	1-246-463-11	Ⓐ 390
R17	1-246-467-11	Ⓐ 560
R18	1-246-519-11	Ⓐ 82k
R19	1-246-487-11	Ⓐ 3.9k
R20	1-246-473-11	Ⓐ 1k
R23	1-246-521-11	Ⓐ 100k
R24	1-246-429-11	Ⓐ 15

○ The circled letters (Ⓐ to Ⓩ) are applicable for European model only.

Ref. No.	Part No.		Description
R25~27	1-246-473-11	Ⓐ	1 k
R28~30	1-246-491-11	Ⓐ	5.6 k
R31	1-246-473-11	Ⓐ	1 k
R33	1-246-497-11	Ⓐ	10 k
R34	1-246-473-11	Ⓐ	1 k
R35	1-246-521-11	Ⓐ	100 k
R36	1-246-523-11	Ⓐ	120 k
R37	1-246-435-11	Ⓐ	27
R38	1-246-481-11	Ⓐ	2.2 k
R39	1-246-521-11	Ⓐ	100 k
R40	1-246-449-11	Ⓐ	100
R42	1-246-473-11	Ⓐ	1 k
R43	1-246-465-11	Ⓐ	470
R44	1-246-467-11	Ⓐ	560
R45	1-246-473-11	Ⓐ	1 k
R46	1-246-511-11	Ⓐ	39 k
R47	1-246-499-11	Ⓐ	12 k
R48	1-246-479-11	Ⓐ	1.8 k
R49	1-246-425-11	Ⓐ	10
R50	1-246-495-11	Ⓐ	8.2 k
R51	1-246-489-11	Ⓐ	4.7 k
R52	1-246-425-11	Ⓐ	10
R53	1-246-469-11	Ⓐ	680
R54	1-246-437-11	Ⓐ	33
R55	1-246-477-11	Ⓐ	1.5 k
R56	1-246-437-11	Ⓐ	33
R57	1-246-481-11	Ⓐ	2.2 k
R58	1-246-473-11	Ⓐ	1 k
R59	1-246-421-11	Ⓐ	6.8
VR1	1-224-334-00	Ⓑ	Resistor, variable; 5 kΩ; TONE
VR2	1-224-333-00	Ⓑ	Resistor, variable; 10 kΩ; VOLUME

Ref. No.	Part No.		Description
			SWITCHES
S1	1-514-316-00	Ⓓ	Slide, band select
S2,3	1-516-778-XX	Ⓒ	Slide, AFC; POWER
			JACKS
J1	1-507-398-00	Ⓑ	EARPHONE
J2	1-507-459-00	Ⓑ	EXT POWER IN DC 4.5V
			MISCELLANEOUS
ANT	1-501-162-00	Ⓕ	Antenna, telescopic
SP	1-502-558-00	Ⓗ	Speaker

ACCESSORIES

Part No.		Description
X-3850-903-0	Ⓕ	Shoulder Strap Ass'y
1-504-059-00	Ⓒ	Earphone, ME-20H
3-995-746-11	Ⓑ	Manual, instruction